NO ILLUSTRATION AVAILABLE

T-34C AIRCRAFT FLIGHT INSTRUMENT TRAINER, DEVICE 2B37

TRAINING CATEGORY:

AVIATION (Instrument)

ORIGINATING AGENCY:

DCNO/AIR

SECURITY CLASSIFICATION:

Device 2B37 is unclassified.

INTENDED USE:

The T-34C Flight Instrument Trainer will be used to train student Naval Aviators/flight instructors T-34C procedures, ground handling, normal and emergency flight modes, communications, navigations, and cross-country missions.

The trainer shall provide training in cockpit preflight and starting procedures, aircraft maneuvers, landing and take-off procedures, and shutdown and postflight procedures for the T-34C aircraft.

FUNCTIONAL DESCRIPTION:

The T-34C Flight Instrument trainer will simulate the forward flight compartment of the single engine turbo-prop T-34C aircraft. The trainer shall consist of the trainee station, the instructor station, the digital computation system.

The trainee station shall duplicate the pilot station and cockpit of the T-34C aircraft. All displays, instruments, controls, lights etc., shall be located in the same position as in actual aircraft. Characteristic oscillations and vibrations of T-34C aircraft shall be simulated by the application of frequencies, amplitudes, and directions, representative of those experienced in normal flight conditions and maneuvers.

The instructor's station shall contain the instructor station control console. The console shall consist of vertical or inclined panels containing all controls, displays, instruments, and other equipment necessary to control the training situation. An intercommunication system shall be provided to permit conversation with an observer and trainee.

The digital computer system shall provide the computations and control of the motion system, trainee station, instructor station and other equipment. Programs developed with the trainer shall include the following:

1. Real-time simulation, control, and processing programs.

2. Off-line function data generation program

3. Utility programs.

4. System vertification programs. The trainer shall include a motion system. The motion system shall provide a minimum of 2 degrees of freedom consisting of pitch and roll.

The effects of humidity, dewpoint, precipitation, and icing on engines shall happen automatically any time the simulated free air temperature is within the normal range for the effects

Normal and abnormal sounds which provide useful cues to the pilot shall be simulated with respect to approximate location, frequency and amplitude. Simulated crash conditions shall result in a brilliant red flash visible in the trainee station and coordinated with a crash alarm bell. All instrument indications shall be frozen at the instant of crash.

The instructor shall have the capability of introducing programmed malfunctions into the system, such as icing, turbulence, and all emergency procedures. He will also be able to override the crash condition. The trainer shall provide simulation of the design basis aircraft for normal and emergency operation. Simulation shall include starting, ground handling, take-off, climb to altitude, flight missions, instrument approaches, landing and shut down.

PHYSICAL INFORMATION:

The trainer components shall be capable of passing through equipment entrances which are 6' wide and 8' high.

Weight of trainer components excluding cockpit shall not exceed structural capabilities of false flooring.

Cockpit shell interior and exterior colors shall be the same as the T-34C aircraft.

ENVIRONMENTAL CHARACTERISTICS:

The digital computer, peripheral units and ancillary interface equipment shall meet the following climatic conditions:

Temperature

1. Operation: + 5° C to + 40° C,

2. Non-operation and Storage: 0°

Humidity: 5 to 90%

INSTALLATION AREA:

Large training room with special raised flooring.

POWER REQUIREMENTS:

The equipment shall be designed to operate from a power source of 120/208 volt, 3-phase, 4-wire, 60 Hp.

SPECIAL REQUIREMENTS:

Trainer requires raised flooring.

PERSONNEL:

Instructor

Student

CONTRACT IDENTIFICATION:

Manufactured by Beech Aircraft Corp., Wichita, KS under NAVTRASYSCEN Contract No. N00019-75-C-0444.

LOCAL STOCK NUMBER:

6930-LL-C00-4488